AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the above-captioned application:

LISTING OF CLAIMS

1-36. (Canceled)

37. (Currently amended) A nanoscale particle comprising an artificial membrane scaffold protein and at least one G protein coupled receptor protein, and further comprising a phospholipid or a mixture of phospholipids, wherein said nanoscale particle has a diameter between 5 nm and 500 nm, wherein said artificial membrane scaffold protein, in an aqueous environment, self-assembles in the presence or absence of phospholipid or in the presence of a mixture of phospholipids, into a nanoscale particle between about 5 nm and about 500 nm in diameter, wherein said membrane scaffold protein is amphipathic and wherein said membrane scaffold protein forms at least one alpha helix- and lacks an N-terminal globular domain of ~~a~~ human apolipoprotein A1.

38-40. (Canceled)

41. (Previously amended) The nanoscale particle of claim 37, wherein said G-protein coupled receptor is a 5-hydroxytryptamine receptor.

42. (Previously amended) The nanoscale particle of claim 37, wherein said artificial membrane scaffold protein comprises an amino acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:17, amino acids 13 to 414 of SEQ ID NO:17, SEQ ID NO:19, amino acids 13 to 422 of SEQ ID NO:19, SEQ ID NO:23, amino acids 13 to 168 of SEQ ID NO:23, SEQ ID NO:29, amino acids 13 to 169 of SEQ ID NO:29, SEQ ID NO:43, amino acids 13 to 201 of SEQ

ID NO:43, SEQ ID NO:44, amino acids 13 to 201 of SEQ ID NO:44, SEQ ID NO:45, and amino acids 13 to 392 of SEQ ID NO:45.

43. (Previously amended) The nanoscale particle of claim 37, wherein said membrane scaffold protein is fused genetically with the G protein coupled receptor protein.

44-48. Cancelled

49. (Withdrawn/Presently amended) A method for incorporating at least one integral membrane protein into a nanoscale particle which is stable and soluble in aqueous solutions, said method comprising the step of allowing a an artificial membrane scaffold protein and at least one integral membrane protein to self assemble into nanoscale particles in an aqueous environment, optionally in the presence of at least one phospholipid, whereby nanoscale particles are formed, wherein said integral membrane protein is a G protein coupled receptor protein and wherein said artifical membrane scaffold protein lacks an N-terminal globular domain.

50-1. (Canceled)

52. (Withdrawn) The method of claim 49, wherein said G-protein coupled receptor is a 5-hydroxytryptamine receptor.

53. (Withdrawn) The method of claim 49, wherein said membrane scaffold protein comprises an amino acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:9, SEQ ID NO:17, amino acids 13 to 414 of SEQ ID NO:17, SEQ ID NO:19, amino acids 13 to 422 of SEQ ID NO:19, SEQ ID NO:23, amino acids 13 to 168 of SEQ ID NO:23, SEQ ID NO:29, amino acids 13 to 169 of SEQ ID NO:29, SEQ ID NO:43, amino acids 13 to 201 of SEQ ID NO:43, SEQ ID NO:44, amino acids 13 to 201 of SEQ ID NO:44, SEQ ID NO:45, and amino acids 13 to 392 of SEQ ID NO:45.

54-58. Cancelled

59. (Previously amended) A tandem repeat membrane scaffold protein that, in an aqueous environment, self assembles with a phospholipid or a mixture of phospholipids, into a nanoscale particle between 5 nm and 500 nm in diameter, wherein said membrane scaffold protein is amphipathic, wherein said membrane scaffold protein forms at least one alpha helix and wherein said membrane scaffold protein has the amino acid sequence given in SEQ ID NO:17, amino acids 13 to 414 of SEQ ID NO:17, SEQ ID NO:19, amino acids 13 to 422 of SEQ ID NO:19, SEQ ID NO:45 or amino acids 13 to 392 of SEQ ID NO:45.

60. (Cancelled)